



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/826,321

04/19/2004

Craig A. Branch

026746.101-US01

1066

26853 7590 05/07/2008
COVINGTON & BURLING, LLP
ATTN: PATENT DOCKETING
1201 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, DC 20004-2401

EXAMINER

LAMPRECHT, JOEL

ART UNIT

PAPER NUMBER

3737

MAIL DATE

DELIVERY MODE

05/07/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/826,321	Applicant(s) BRANCH ET AL.	
	Examiner JOEL M. LAMPRECHT	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/08/08 has been entered.

Claim Objections

Claims 8-28, 30-32, and 34 are objected to because of the following informalities: Regarding claims 13-16, there is improper means plus function language and "means for locomotion" is not positively set forth as a part of the claimed invention. Regarding claims 8-28, it is unclear exactly how the elements set forth further limit the subcombination of an apparatus for use in providing RF shielding for an NMR apparatus. Regarding claim 12, it is unclear as to how the structures set forth are related to the apparatus of claim 1; specifically, in the recitation (of claim 12) "the substantially complete and continuous RF shield" relates to a combination which is not claimed. Regarding claims 18, 19, 21, 23-28, "the patient support" and "the support" lack antecedent basis. Regarding claim 27 the recitation of a movable coil does not further limit the claim other than to say it could some how or in some way be moved, rather than providing some additional structural limitation. Regarding claim 30, the claim is directed to defining an unclaimed element (magnet). Regarding claim 31, the

system lacks antecedent basis and it is unclear how the MR process of the claim is related to or differs from that of claim 1. Regarding claim 32, the claim is directed to defining an unclaimed element (the opening of a patient-end surface of the magnet). Regarding newly added claim 34, it is considered redundant in light of the amendments to independent claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 33 of the disclosed invention is inoperative and therefore lacks utility. Regarding claim 33 as listed, there is not possible way to prevent all RF signals which could possibly interfere with an NMR measurement from passing from an area outside an RF shield to an area inside the RF shield.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoult et al. '278 (US Patent 5,735,278). Hoult et al. teach a system for providing RF shielding comprising: a holder or canopy comprising holder-RF shielding (see Col 10, Line 15-50). Element 72 discloses a protective covering and layer 71 of Figure 8 discloses a

magnet comprising magnet-RF-shielding (Col 10 Line 15-24, and also Col 10 Line 36-44). The combination of the holder-RF-shielding and the magnet-RF-shielding to form a substantially complete RF shield. The entirety of the holder comprises RF shielding and therefore inherently the bottom and canopy would comprise RF shielding including the bottom portion of the table itself which would comprise a rigid portion.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4-32, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoult et al.'278 (US Patent No. 5,735,278) in view of Palkovich et al.'217 (US Patent No. 5,012,217). Hoult et al.'278 teach a system for providing RF shielding comprising: a

Art Unit: 3737

holder or canopy comprising holder-RF-shielding (see col. 10, lines 15-50; and particularly referring to element 72 or electrically conductive fabric bag; note that as evidenced by the Merriam-Webster definitions a canopy is a protective covering); and a magnet comprising magnet-RF-shielding (see layer 71 of Figure 8 which is the magnet RF shielding and see col. 10, lines 15-24) and also see col. 10, lines 36-44; referring to the combining of the holder-RF-shielding and the magnet-RF-shielding to form a substantially complete RF shield. The whole holder includes RF shielding and therefore inherently any of its sub-parts such as the bottom portion would necessarily include RF shielding. Finally, Hoult et al. discloses an apparatus which is capable of abutting and adjoining at least partially to the patient end of a magnet to match up to and provide RF-shielding. Hoult et al. '278 does not explicitly teach that the magnet itself comprises RF shielding, meaning that there is no explicit recitation that the magnet has sufficient RF shielding in that it is a superconducting magnet with an inner diameter having a cryostat made of radio-opaque material. In the same field of endeavor, Palkovich et al. '217 teaches the magnet itself comprises RF shielding, meaning that the magnet has sufficient RF shielding in that it is a superconducting magnet with an inner diameter having a cryostat made of radio-opaque material (see col. 6, lines 4-12 and col. 6, lines 53-61; wherein iron is radio-opaque) and is capable of providing an RF shield which encloses all the magnets and coils. It would have been obvious to one skilled in the art at the time that the invention was made to have modified Hoult et al. '278 and incorporated the teaching of Palkovich et al. '217 of using his particular magnet

arrangement with the cryostat in order to increase the RF shielding of the system (see col. 6, lines 53-61 indicating a four-fold increase of the shielding factor).

Hoult et al. '278 teach the locomotion of a patient into the imaging volume as indicated in figure 8 having wheels or rollers as indicated. Hoult et al. '278 further teach the use of an RF antenna on the patient support unit as indicated by element 18 in Figure 8 (also see col. 5, lines 20-22).

The opening of the canopy is interpreted as the aperture, which connects the two parts of shielding, the holder and the magnet. It would have been obvious to have combined the Palkovich reference with the RF shielding system of Hoult et al for the purpose of providing a magnet which is not merely *associated* with RF shielding, but which contains additional shielding for prevention of unnecessary electromagnetic fields during a procedure.

Response to Arguments

Applicant's arguments filed 2/08/08 have been fully considered and are responded to below. With regard to independent claim 1, Examiner would first like to point out that an apparatus is being claimed comprising a radio-opaque holder with rigid surface that is capable of substantially matching an opening defined by a patient end surface of some NMR magnet. The final limitation mentioned and the rest of the limitations of the independent claim are directed to the intended use of the subcombination being claimed. Examiner suggests that if Applicant would like to further define over the art of record, to include the positive recitation of the magnet part itself

and the relationship and connection to the holder being defined, as without that recitation, the subcombination is only left with intended use statements rather than claimed features. Terminal disclaimers have been filed on 2/8/08 to avoid double patenting issues with other commonly owned patent applications 11/592118, 11/826297 and this application which were raised during the interview of 1/11/08. In response to the arguments levied against the Palkovich et al patent, magnetic shielding has an inherent value in RF shielding as varying magnetic fields directly generate current vortices which would cancel an applied magnetic field and thus affect the electromagnetic radiation being emitted. The active shields provided by Palkovich et al use alternative magnets to cancel out magnetic fields and thus provide RF shielding.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOEL M. LAMPRECHT whose telephone number is (571)272-3250. The examiner can normally be reached on Monday-Friday 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ruth S. Smith/
Primary Examiner, Art Unit 3737

JML